



Goddard Procedural Requirements (GPR)

DIRECTIVE NO. GPR-8715.10A
EFFECTIVE DATE: November 30, 2017
EXPIRATION DATE: November 30, 2022

APPROVED BY Signature: Original Signed by
NAME: William A. Wrobel
TITLE: Director of Wallops Flight Facility

COMPLIANCE IS MANDATORY

Responsible Office: 803/Safety Office

Title: GSFC Explosive Safety Program

PREFACE

P.1 PURPOSE

To establish requirements for implementing the Explosive Safety Program for Goddard Space Flight Center (GSFC), including the component facilities, which comply with the requirements of NASA-STD-8719.12, *Safety Standard for Explosives, Propellants, and Pyrotechnics*.

This directive establishes GSFC-STD-8715.1 *Goddard Space Flight Center (GSFC) Explosive Safety Program*, as the requirements baseline for the Explosive Safety Program process for applicable work performed at or under the authority of GSFC. Organizational responsibilities relative to this directive are defined herein.

P.2 APPLICABILITY

This GPR is applicable to all of GSFC including: the Greenbelt campus in Maryland, the Wallops Flight Facility (WFF) in Virginia, the NASA Independent Verification & Validation (IV&V) Facility in West Virginia, the Goddard Institute for Space Studies (GISS) in New York, the White Sands Complex (WSC) in New Mexico, and the Columbia Scientific Balloon Facility (CSBF) in Palestine, Texas. In addition to these main sites, this GPR is applicable to other sites designated for GSFC approved programs and projects (e.g., Poker Flat Research Range (PFRR) and White Sands Missile Range (WSMR), etc.).

- a. In this directive, all document citations are assumed to be the latest version unless otherwise noted.
- b. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term “shall.” The terms “may” or “can” denote discretionary privilege or permission; “should” denotes a good practice and is recommended but not required; “will” denotes expected outcome; and “are/is” denotes descriptive material.

P.3 AUTHORITY

- a. NASA-STD-8719.12, *Safety Standard for Explosives, Propellants, and Pyrotechnics*

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- b. NPR 8715.3, NASA General Safety Program Requirements

P.4 APPLICABLE DOCUMENTS AND FORMS

- a. NPR 1800.1, NASA Occupational Health Program Procedures
- b. GSFC-STD-8715.1, GSFC Explosive Safety Program
- c. GPR 1400.1, Waiver Processing
- d. GPR 1410.2, Configuration Management
- e. GPR 8715.11, Training and Certification Procedures for Ordnance Handlers
- f. GSFC Form 23-2, GSFC Explosive Facility License

P.5 CANCELLATION

GPR 8715.10-, GSFC Explosive Safety Program (*baselined*)

P.6 SAFETY

All personnel conducting operations under the authority of GSFC and handling ordnance shall submit satisfactory evidence of the required skills, knowledge, and training to the GSFC Explosive Safety Officer (ESO) and become certified per GPR 8715.11, *Training and Certification Procedures for Ordnance Handlers*.

All personnel, contracts, and programs conducting operations with GSFC, have the potential to encounter Unexploded Ordnance/Munitions and Explosives of Concern (UXO/MEC). Properly maintained facilities and equipment is essential for the effective and safe storage and processing of explosives. Proper ground testing and certification is required for safe compliance of the Explosive Safety Program.

P.7 TRAINING

All personnel conducting operations under the authority of GSFC involving handling Explosives, Energetic Liquids, and Pyrotechnics (EELP) or other ordnance shall be trained in general practices of UXO or MEC.

For all GSFC and component facilities' ordnance operations, GPR 8715.11 and NPR 1800.1 *NASA Occupational Health Program Procedures* impose requirements for personnel certification, physical examination requirements, and required training.

P.8 RECORDS

Record Title	Record Custodian	Retention
NASA Form, GSFC 23-2, Explosive Facility License (EFL) for individual storage locations	Explosive Safety Officer	NRRS 8/107* - Temporary – Destroy/delete between 0 and 30 years after program/project termination.
803 Explosive Site Plan (ESP) for individual storage locations	Explosive Safety Officer	NRRS 8/107*

*NRRS 1441.1 – NASA Records Retention Schedules

P.9 MEASUREMENT/VERIFICATION

The Explosive Safety Officer (ESO) will verify the following information is in accordance with Goddard Technical Standard GSFC-STD-8715.1, *GSFC Explosive Safety Program*:

- a. Results of explosive safety facility inspections and audits
- b. Monthly explosive inventories for all facilities and programs

Through the above information, actions will be addressed and inventories will be maintained to acceptable requirements per GSFC-STD-8715.1.

PROCEDURES

1.0 RESPONSIBILITIES:

1.1 Center Director:

The Center Director shall appoint the Explosive Safety Officer (ESO) for GSFC.

1.2 Directors Of:

- 1.2.1 Directors Of shall ensure GSFC-STD-8715.1 is invoked in management instructions and contracts governing all locations/activities under their cognizance that involve storage, processing or use of Explosives, Energetic Liquids, and Pyrotechnics (EELP) which fall within the scope of that standard. With the approval of the ESO, GSFC-STD-8715.1 may be tailored to address location/facility or activity/mission specific considerations.

Note: Invoking GSFC-STD-8715.1 is not intended to prevent the use of systems, methods, devices, or measures of equivalent or superior quality, effectiveness, or safety in lieu of those prescribed by the standard. The ESO determines equivalency based on review of technical documentation submitted by the responsible facility/project management.

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1.3 Explosive Safety Officer (ESO):

1.3.1 The ESO shall have the following responsibilities for each applicable location/activity (including all component facilities) under their cognizance:

- a. Management of EELP safety in accordance with GSFC-STD-8715.1.
- b. Maintenance of the following approved documents:
 - (1) Explosive Site Plans (ESP)
 - (2) Explosive Facility Licenses (EFL)
- c. Establishing and implementing the Explosive Safety Program as well as acting as a technical authority over the Explosive Safety Program.
- d. Maintain GSFC-STD-8715.1 in accordance with the requirements of GPR 1410.2, *Configuration Management*.
- e. Facilitate exchange of EELP information and provide technical guidance to facilities as appropriate.
- f. Oversee establishment of appropriate GSFC training offerings for EELP.
- g. Establish and maintain policies and procedures for training and certification of all personnel in jobs related to EELP per NASA-STD-8719.12, *Safety Standard for Explosives, Propellants, and Pyrotechnics* and GSFC-STD-8715.1, *GSFC Explosive Safety Program*.

1.4 Institutional Support:

1.4.1 The Office of Human Capital Management (OHCM) shall coordinate with the ESO to document explosive training offerings and registering participants in the System for Administration, Training, and Educational Resources for NASA (SATERN).

1.4.2 The Management Operations Directorate shall, in accordance with GSFC-STD-8715.1:

- a. Provide support for all EELP movements utilizing public roadways and prepare or oversee preparation of all transportation related documentation required for EELP movements.
- b. Provide prior notification to the ESO, in writing, of all planned significant modifications/construction or major maintenance activities for facilities utilizing EELP or occurring within the hazardous storage and processing areas created by EELP.

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- c. Coordinate with the ESO for the design, construction, and maintenance of planned and existing facilities involving EELP or occurring within the hazardous storage and processing areas created by EELP.
 - d. Support the resolution of incidents involving Munitions and Explosives of Concern (MEC) and Unexploded Ordnance (UXO).
 - e. Develop and implement security plans specifically designed to provide the appropriate level of protection in the transportation, receipt, access, use, storage, and accountability of GSFC EELP.
- 1.5. The Safety Division within the Safety and Mission Assurance Directorate shall ensure that the ESO is notified of all mishaps and close calls involving EELP.
- 1.6. The WFF Safety Office within the Suborbital and Special Orbital Projects Directorate shall ensure that the ESO is notified of all mishaps and close calls involving EELP.
- 1.7. All Directorates with programs, projects, and/or missions involving EELP shall develop and implement formal documented processes and procedural requirements in accordance with GSFC-STD-8715.1.
- 1.8. Program Managers and/or Requirements Initiators shall, with coordination/assistance from the ESO as needed, ensure that the appropriate requirements from GSFC-STD-8715.1 and this GPR are included in acquisition documentation provided to Procurement so that the Contracting Officer can incorporate these requirements into contracts/agreements.
- 2.0 EXPLOSIVES, ENERGETIC LIQUIDS, AND PYROTECHNICS (EELP) PROCESS:**
- 2.1 All work by civil servants and support service contractors involving storage, processing and use of EELP at all GSFC locations shall be performed in accordance with GSFC-STD-8715.1 and the associated ESPs and EFLs.
- 2.2 Through incorporation into their respective contracts, responsible Contracting Officers and Project Managers shall apply requirements of GSFC-STD-8715.1 to contractors, tenants, or customers if non-NASA EELP operations place NASA personnel, facilities, or other property at risk.
- 2.3 Supervisors, project managers, or designees shall ensure that EELP personnel are qualified to perform their roles under GSFC-STD-8715.1 safely and effectively, based on training, prior experience, and physical abilities.

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- 2.3.1 If any EELP team member is not satisfied that all aspects of an EELP related operation are correct and complete prior to proceeding, he/she has the authority to refuse to perform the operation until all issues have been resolved. Issues that cannot be resolved onsite by discussion with the activity lead and team members will be brought to the immediate attention of his/her supervisor or the ESO.
- 2.3.2 Personnel shall cease EELP related operations in the event of an actual or reported failure or unsafe condition and only resume operations after failures or unsafe conditions have been properly addressed and corrected.
- 2.4 The ESO along with the Facility Operations Manager (FOM) shall ensure building occupants are notified of potential safety hazards related to the storage, movement or use of EELP in and around facilities under their cognizance.

3.0 WAIVERS:

- 3.1 If the requirements of this directive cannot be met, a waiver request shall be prepared in accordance with GPR 1400.1, *Waiver Processing*.
- 3.2 In emergency EELP related situations, where there is an imminent risk of death, serious injury or significant property damage, personnel may deviate from the requirements of this GPR and the GSFC-STD-8715.1 to the extent necessary to address the situation (i.e., render safe and stable) without obtaining prior waiver approval. Under such circumstances, the particulars of the situation and the actions taken shall be reported to the ESO as soon as practical but in all cases within 24 hours.

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Appendix A – Definitions

See Goddard Technical Standard GSFC-STD-8715.1, *GSFC Explosive Safety Program*, for definitions related to the Explosive Safety Program.

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Appendix B – Acronyms

CSBF	Columbia Scientific Balloon Facility
EELP	Explosives, Energetic Liquids, and Pyrotechnics
EFL	Explosive Facility License
ESO	Explosive Safety Officer
ESP	Explosive Site Plan
FOM	Facility Operations Manager
GISS	Goddard Institute for Space Studies
GSFC	Goddard Space Flight Center
IV&V	Independent Verification and Validation Facility
MEC	Munitions and Explosives of Concern
OHCM	Office of Human Capital Management
PFRR	Poker Flat Research Range
SATERN	System for Administration Training and Educational Resources for NASA
UXO	Unexploded Ordnance
WFF	Wallops Flight Facility
WSC	White Sands Complex
WSMR	White Sands Missile Range

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CHANGE HISTORY LOG

Revision	Effective Date	Description of Changes
Baseline	05/24/2016	Initial Release
A	11/30/2017	Removed Ordnance Training & Certification Committee (OTCC) citations replacing each with a reference to the appropriate source documentation where detailed requirements can be found.

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